

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 01-245512

(43)Date of publication of application : 29.09.1989

(51)Int.Cl.

H01L 21/205

(21)Application number : 63-071873

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(22)Date of filing : 28.03.1988

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(54) FORMATION OF III-V COMPOUND SEMICONDUCTOR BY EPITAXIAL GROWTH

(57)Abstract:

PURPOSE: To make it possible to epitaxially grow a II-V compound semiconductor of high quality by a method wherein an atomic layer, consisting of a group V element which is different from the group V element constituting the III-V compound semiconductor, is formed on an Si substrate.

CONSTITUTION: Using an Si substrate having the orientation slightly deviated from [100] as a substrate, and the Si substrate is inserted into an MOCVD device. After the surface of the Si, substrate has been cleaned, the temperature of substrate is set at 700W900° C. AsH3 gas is introduced for five minutes as the gas containing the group V element which is different from the V-group element constituting GaP, and an As atomic layer is formed on the Si substrate. Then, after the AsH3 gas has been switched to the PH3 gas which is the gas containing a group-V element different from the group-V element constituting GaP, trimethylgallium is introduced as the gas containing the group III element which constitutes GAP, and the GAP is formed on the substrate.

LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

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